

SMALL ARRAY MICROPHONE FOR BEAM-FORMING AND NOISE SUPPRESSION

ABSTRACT OF THE DISCLOSURE

[182] Techniques are provided to suppress noise and interference using an array microphone and a combination of time-domain and frequency-domain signal processing. In one design, a noise suppression system includes an array microphone, at least one voice activity detector (VAD), a reference generator, a beam-former, and a multi-channel noise suppressor. The array microphone includes multiple microphones - at least one omni-directional microphone and at least one uni-directional microphone. Each microphone provides a respective received signal. The VAD provides at least one voice detection signal used to control the operation of the reference generator, beam-former, and noise suppressor. The reference generator provides a reference signal based on a first set of received signals and having desired voice signal suppressed. The beam-former provides a beam-formed signal based on a second set of received signals and having noise and interference suppressed. The noise suppressor further suppresses noise and interference in the beam-formed signal.